



FUTURE
Top producer

Optimize
your heifers' future
dairy performance!

Heifer Program
OPTIVIA 
Optimized Growth, Ultimate Performance

Why will Optivia heifers out-perform traditionally raised heifers?

Meeting specific growth and development goals at each critical growth phase of the heifer's life is one of the key components of the Optivia Heifer Program.

Research clearly demonstrates that higher rates of gain in the first few months of a calf's life will translate to more milk, 820 kg (1,800 lb), in the 1st lactation. What kind of gains should you expect? The calf should "double" its birthweight by 56 days (8 weeks) of age. This will be achieved by providing the highest quality milk replacers and calf starters - at the right time and the right amount.

The dairy heifer should enter the milking line-up between 22-24 months age at 1st calving (AFC). Research would indicate that animals that are older than this will produce less milk and will leave the herd earlier than younger heifers! This requires that the dairy heifer be bred at the proper size and age to achieve these goals. A realistic goal for breeding would be to breed between 13-15 months at 55% to 60% of mature body weight. Our height recommendation for breeding is a minimum of 50-52" or 127-132cm.

The dairy heifer must be the proper body size and stature to ensure optimum milk production after calving. A body weight goal (after calving weight) would be 80% to 85% of mature body weight.

**"Your heifers have the opportunity to be Optivia heifers!
Get them off to a great start - right from Day 1!"**



The **OPTIVIA** Program:

The **Optivia** Program is based on the latest discoveries on heifer development.

OPTIVIA uses integrated products and recommendations adapted to each stage of growth to optimize future dairy performance.



OPTIVIA optimizes all important aspects of your heifer development.

Optimum growth and properly balanced feed

- Provides the required nutrients at each stage of growth, for optimum gains in weight and height.
- Promotes the development of lean tissue rather than fat.
- Eliminates over feeding and reduces waste due to accurate formulation with **NEWTON**® software, based on the real needs of the heifers and the assessment of your forages.



Maximize future dairy performance

- Enables heifers to calve and begin producing milk earlier, at the right weight and height.
- Ensures better milk production in first lactation.
- Maximizes peak milk.
- Increased longevity.

Maintenance of Good Health

- Helps reduce morbidity and mortality.
- Promotes proper rumen development and health.
- Contributes to building a solid immune system.



1 Birth to Weaning
0-2 months

2 Transition and
Early Growth
2-6 months

3 Growth Phase
6-9 months

4 Breeding
9-15 months

5 Bred
15-22 months

6 Close-up
22-24 months

Goals

- **Double Birth Weight at 56 days**
- Maintain optimum growth rates through weaning



“ The primary goal of this critical growth phase is to ‘double’ the birth weight of the calf by 56 days of age. ”

Why is this important?

Extensive research from Cornell University would indicate that calves that gain appropriately during this early phase will produce more milk than herd mates that gained at “traditional” levels. The Cornell data examined over 1400 weaning weights and 1200 completed 1st lactation records and concluded that for every 0.45 kg (1 lb) of gain above traditional growth milk yield increased by 490 kg (1,080 lb). (Dr. Mike Van Amburgh, Shur-Gain Dairy Seminar 2010)

A summary of seven trials that compared cows that were raised on conventional vs. intensified milk replacer programs reported the milk yield increased by approximately 820 kg (1,800 lb) in the 1st lactation.

How can this gain be obtained?

Calf Birth Weight		"Doubling" the Birth Weight		Required ADG	
kg	lb	kg	lb	kg	lb
35 kg	77.2 lb	70 kg	154.3 lb	0.63 kg	1.39 lb
40 kg	88.2 lb	80 kg	176.4 lb	0.71 kg	1.57 lb
45 kg	99.2 lb	90 kg	198.4 lb	0.80 kg	1.76 lb
50 kg	110.2 lb	100 kg	220.5 lb	0.89 kg	1.96 lb
55 kg	121.3 lb	110 kg	242.5 lb	0.98 kg	2.16 lb

Feeding levels of milk replacer solution that are higher than traditional levels, 4 litres/day (1.1 gallon/day), is the key strategy to "double" the birth weight.



RECOMMENDATION

The Optivia 26:16 Advantage Milk Replacer is designed to be fed at a minimum rate of 900 g/hd/day (2 lb/hd/day) total, mixed at a concentration of 150 grams/liter (1.3 lb/gallon) of milk replacer solution. The Optivia 26:16 Advantage Milk Replacer was developed to support 0.6-0.9 kg (1.3-2 lb) of gain per day.

▶ Recommend a 3rd feeding (9 litres) below -15° C.

100% Milk Protein

The key to formulating a high quality milk replacer is to start with the right ingredients! The best sources of protein and carbohydrates are from milk ingredients (whey, whey protein concentrate, skim milk, delactosed whey, casein, lactose). These ingredients are highly digestible and provide lactose, an excellent carbohydrate source, to the pre-ruminant calf. Calves raised on milk replacers formulated with All Milk proteins, consistently out perform those raised with alternative protein sources.

Mild (Partial) Acidification

Another feature that has been incorporated into the Optivia milk replacer line-up is mild acidification. The primary goal of mild acidification is to reduce the time that the pH of the abomasum is elevated. The lower pH assists in limiting harmful bacterial growth such as E.coli while encouraging the growth

of useful bacteria such as lactobacillus. Mildly acidified milk replacers help to prevent separation and are easy to use without handling dangerous acids on-farm.

Amino Acid Fortification

The Optivia 26:16 Advantage Milk Replacer has been carefully formulated to provide optimum lean tissue growth without adverse accumulation of body fat. The supplementation of two key amino acids – lysine and methionine, brings the amino acid profile of the Optivia 26:16 Advantage Milk Replacer to a level that is similar to whole milk! Hill et al (2008), reported higher ADG during days 1-28 for a 26% CP milk replacer with supplemental amino acid (AA) compared to a 28% CP milk replacer with or without supplemental AA. The overall benefit is that less total protein is being fed to the calf allowing the calf to be efficient at converting nutrients to lean muscle growth.

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22-24 months

Goals

- Double Birth Weight at 56 days
- Maintain optimum growth rates through weaning

From milk replacer to calf starter

RECOMMENDATION



Feeding higher levels, 8-10 litres (2.1-2.6 gallons), of milk replacer solution than the minimum will result in higher rates of gain. Current research data demonstrates that calves that are fed high levels, >8 litres (2.1 gallons), of milk or milk replacer solution, may consume inadequate levels of calf starter during the 1st six weeks. Adequate calf starter intake is essential for volatile fatty acid (VFA) production, particularly butyrate, which enables early rumen development so that the young calf can successfully transition from consuming a liquid diet to grain and eventually forage.



Only Milk



Milk and Calf Starter



“ Proper rumen development is critical for weaning success. ”

Calf Starter Intake

Calf starter intake is crucial for rumen development. It must be consumed for an adequate length of time and at an adequate rate to maintain the desired goal – double the birth weight!

How can you encourage optimum consumption of calf starter?



RECOMMENDATION

- 1) Textured calf starter (J.C. Porter, University of New Hampshire)
 - ADG and starter intake (0-8 weeks) was higher for textured calf starter versus pelleted calf starter.
 - Research concluded that the “1st week to observe ruminating” and “% ruminating” was greater for textured calf starter versus pelleted calf starter.
- 2) Provide some chopped hay or straw (<10% of intake) to the young calf.
 - Research indicates that when calves were presented with chopped straw, calf starter intake and ADG increased over those calves that did not have access to chopped straw!
- 3) Feed Optivia 22% Calf Starter with Flavour Burst

EXCLUSIVE

SHUR-GAIN

Palatability research conducted at the Nutreco Agresearch Facility in Burford demonstrated that the Optivia 22% Calf Starter with the **Flavour Burst** nugget outperformed all of the other calf starters in the trial!

Try it, she will like it!



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Goals

- Successful transition from weaning to group housing environment
- Successful transition to fermented feeds and/or TMR
- Minimum Average daily gain of 0.8 kg (1.8 lb)

Key Points to Success

In many dairy operations, the Transition and Early Growth Phase represents the time period when the recently weaned calf is moved into group housing from individual pens or hutches.

If the calves are already in a group housing environment with “mob” feeders or computer feeding systems during the 0-2 month phase, then the calves have been socialized. This could result in a less traumatic move than

calves that are moved from individually housed calves into a group environment.

During Week One of this time period, it is important to minimize stress. Moving animals into smaller groups (3-6 animals) will improve the success of this move. Continuing to feed the same feed that is offered in the 0-2 Month Phase, will also reduce the stress of change.

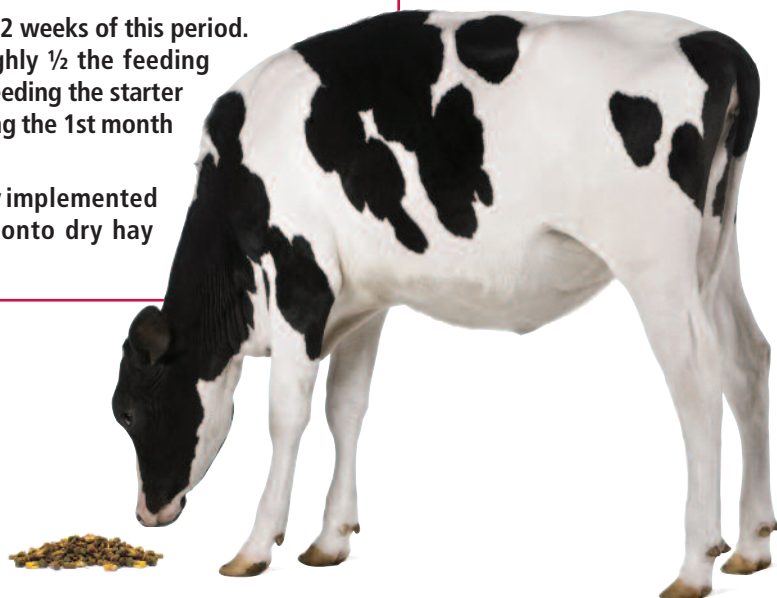
RECOMMENDATION

Full-feed (ad lib) Optivia 22% Calf Starter for the 1st 2 weeks of this period. Introduce the Optivia 18% Heifer Grower at roughly ½ the feeding rate of the Optivia 22% Calf Starter and continue feeding the starter at ½ level. Offer free-choice palatable dry hay during the 1st month of this phase.

Introducing fermented feeds or a TMR can be successfully implemented after the calves have been properly transitioned onto dry hay and Optivia 18% Heifer Grower.

For Optimized Results

To achieve the target of >0.8 kg/hd/day (1.8 lb/hd/day), with optimum height and lean muscle growth, it will require feeding the appropriate amounts of crude protein and energy during this phase. Feeding excessive energy and inadequate crude protein may result in an ADG that is in the target range but lower than desirable height and lean tissue growth.



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Goals

- Average Daily Gain of 0.8 to 0.9 kg (1.8 to 2 lb)
- Optimum body condition score
- Appropriate height

The dairy heifer will reach puberty during the 6-9 month Growth Phase at approximately 40% of mature body weight. Holstein example: 270-280 kg (595-617 lb).

The primary goal during this phase is to develop proper skeletal and lean muscle growth without excessive body fat accumulation.



RECOMMENDATION

Higher levels of nutrients can be derived from the forage portion of the diet as the dry matter intake (DMI) increases during this period, Providing the optimum levels of crude protein and energy will be critical to achieve a target of >0.8 kg/hd/day ADG (1.8 lb/hd/day ADG). Overfeeding high energy ingredients such as corn silage and grain, without consideration of the crude protein in the diet, will result in over-conditioned and undersized heifers.



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Goals

- 55-60% of MBW. Holstein example: 370-400 kg (816-882 lb) body weight
- Optimum wither height. Holstein example: >52 inches height
- 2.75 to 3.00 BCS (maximum body condition score)



RECOMMENDATION

To achieve an AFC (age at first calving) of 24 months or less, the dairy heifer needs to be bred at 13-15 months. Research has demonstrated that heifers that are older than 24 months AFC will produce less milk and leave the herd earlier than herd mates that calve at 24 months of age or less (Dr. Alex Bach, Spain).

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Goals

- Maintaining BCS of 3.5 (maximum)
- Maintain ADG of 0.7 to 0.8 kg (1.5 to 1.8 lb) (dependant on predicted AFC)

Controlling energy consumption to avoid excessive weight gain is critical during this stage.

RECOMMENDATION



This can be accomplished by incorporating lower energy feedstuffs such as chopped straw and mature hay into the diet. This works exceptionally well in a TMR feeding situation but may be less than ideal when individual feedstuffs are fed free-choice. The other method, which can be more difficult to manage, is to limit-feed the heifers in this group. In this situation, adequate access to the bunk and over-crowding can determine the success of this approach.

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Goals

- Maintaining BCS of 3.5 (maximum)
- Obtain a post-partum weight of 80-85% of mature body weight. Holstein example: 540-580 kg (1,191-1,279 lb)

The dairy heifer during this stage is essentially a close-up dry cow.

RECOMMENDATION



She should be moved to a separate dry cow pen at 4-6 weeks before predicted calving date.



Optimized Growth, Ultimate Performance

OPTIVIA SIX STEPS TO SUCCESS

SUPERIOR GROWTH

STEP 1: BIRTH TO WEANING (0-2 MONTHS)

EXCELLENT GROWTH

Optivia 26:16 Advantage Milk Replacer

High protein acidified milk replacer that has been fortified with the key amino acids - lysine and methionine. This milk replacer should be mixed at 150 grams/litre (1.3 lb/gallon) of solution and fed at a minimum rate of 6 litres (1.6 gal.), 900 grams (2 lb) of milk replacer powder.

Optivia 22% Calf Starter (textured)

Designed to provide optimum levels of nutrients to the young calf from earliest acceptance of the ration up to four months of age. The Optivia 22% Calf Starter is formulated to stimulate rapid rumen development. Feed Optivia 22% Calf Starter to appetite up to four months of age.

Optivia 22% Calf Starter (pellet)

Designed to provide optimum levels of nutrients to the young calf from earliest acceptance of the ration up to four months of age. This product is formulated to stimulate rapid rumen development. Feed it to appetite up to four months of age.

Optivia 22:18 High Performance Milk Replacer

High quality acidified milk replacer designed to be mixed at 150 grams/litre (1.3 lb/gallon) of solution. Feed 6 litres (1.6 gallons) of solution/day. Reduce feeding level to 3 litres (0.8 gallon) during the week before weaning.

Optivia 18% Calf Starter (Textured)

Designed to provide optimum levels of nutrients to the young calf during the first two to four months. Feed small amounts initially to ensure that feed is kept fresh at all times. Feed up to 2.5 kg/day (5.5 lb/day) of the ration by two months of age.

Optivia 18% Calf Starter (pellets)

Designed to provide optimum levels of nutrients to the young calf during the first two to four months.

STEP 2: TRANSITION AND EARLY GROWTH PHASE (2-6 MONTHS)

Optivia 22% Calf Starter (textured)

(See above description) This superior calf starter should be fed for the 1st week after calves are moved from Phase 1.

Optivia 22% Calf Starter (pellet)

(See above description)

Optivia 18% Heifer Grower (1.1% ECP) Ration

Feed with the 22% Calf Starter at a ratio of 1:1, approximately 1.3 kgs (2.8 lbs) of each for the remainder of the 3rd month. Use the Optivia 18% Heifer Grower (1.1% ECP) as the sole grain source from months 4-6 accompanied with dry hay or drier fermented forages.

Optivia 18% Calf Starter (Textured)

Feed the Optivia 18% Calf Starter for the 1st week after calves are moved from Phase 1. (See above description)

Optivia 18% Heifer Grower (1.1% ECP) Ration

Feed Optivia 18% Heifer Grower (1.1% ECP) Ration with the 18% Calf Starter at a ratio of 1:1, approximately 1.3 kgs (2.8 lbs) of each, for the remainder of the 3rd month. Use the Optivia 18% Heifer Grower (1.1% ECP) as the sole grain source from months 4-6 accompanied with dry hay or drier fermented forages.

STEP 3: GROWTH PHASE (6-9 MONTHS)

Optivia 16-18% Heifer Grower Ration

Designed to provide optimum levels of nutrients to growing heifers from 3 months until one month prior to calving.

Optivia 35%-45% Dairy Heifer Supplement

Palatable supplement designed to make the Optivia 18% Dairy Heifer Grower. Feed 0.5 kgs/hd/day (1.1 lbs/hd/day) or mix at 250 kg/tonne (500 lb/ton) with on-farm grain sources.

Optivia Plus Heifer Mineral

Specifically designed to meeting the mineral and vitamin needs of growing heifers. This product contains high levels of trace minerals in oxide, sulphate and chelate form. Feed 100 grams/hd/day (3.5 ounces/hd/day) to heifers that are growing at optimum ADG or are under stress from environmental and facility factors.

Optivia 16%-18% Heifer Grower Ration

Designed to provide optimum levels of nutrients to growing heifers from 3 months until one month prior to calving.

Optivia 35%-45% Dairy Heifer Supplement

Designed to make the Optivia 16% Dairy Heifer Grower. Feed 0.5 kgs/hd/day (1.1 lbs/hd/day) or mix at 250 kg/tonne (500 lb/ton) with on-farm grain sources.

Optivia Heifer Mineral

Specifically designed to meeting the mineral and vitamin needs of growing heifers. Feed 100 grams/hd/day (3.5 ounces/hd/day).

STEP 4: BREEDING (9-15 MONTHS)

Optivia 16% Heifer Grower Ration

(See above description)

Optivia 35% or 45% Dairy Heifer Supplement

(See above description)

Optivia Plus Heifer Mineral

(See above description)

Optivia 16% Heifer Grower Ration

(See above description)

Optivia 35% or 45% Dairy Heifer Supplement

(See above description)

Optivia Heifer Mineral

(See above description)

STEP 5: BRED (15-22 MONTHS)

Optivia Plus Heifer Mineral

(See above description)

Optivia Heifer Mineral

(See above description)

STEP 6: CLOSE-UP (22-24 MONTHS)

Propulsion Transition NR™ Dry Cow Ration

Designed to provide optimum levels of nutrients to the close-up heifer 4 weeks before calving. This product will help prepare the close-up dry cow for calving and milk production.

Propulsion Transition NR™ Dry Cow Ration

Designed to provide optimum levels of nutrients to the close-up heifer 4 weeks before calving. Propulsion Transition NRTM Dry Cow Dairy Ration will help prepare the close-up dry cow for calving and milk production.



Heather Holme Holsteins,
Holme Leader Delta EX 92 4E 3*

↑ Turn your heifers
into **OPTIVIA** heifers
and **MEASURE THE DIFFERENCE** ↓

Contact the Shur-Gain service
centre in your region.

Heifer Program
OPTIVIA 
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THE POWER OF RESEARCH WITHIN YOUR REACH